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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,885	12/07/2001	Yuji Aburakawa	216890US2	7571

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EXAMINER

NGUYEN, KHAI MINH

ART UNIT PAPER NUMBER

2684

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,885

Applicant(s)

ABURAKAWA ET AL.

Examiner

Khai M Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5, 7.
- 4) ☐ Interview Summary (PTO-413)
Paper-No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoole (Pat-6480522) in view of Farber (Pat-5969837).

Regarding claim 1, Hoole teaches a mobile communication system including a plurality of base stations (fig.1D, col.7, lines 19-27, col.15, lines 16-35), a control station which controls said base stations (fig.1D, col.15, lines 16-35), and switching apparatuses each of which corresponds to said base station or said control station (fig.71-73, col.53, lines 1-34), wherein said switching apparatuses are connected with each other by a wireless circuit or an circuit (fig.71-73, col.53, lines 1-34, col.56, lines 38-46), said switching apparatus corresponding to a base station or a control station in a sending side comprising:

a modulation part for modulating a first signal into a second signal of a unified transmission form (see abstract, col.7, lines 19-27, col.8, lines 34-67);

a first switching part for switching an output destination of said second signal from said modulation part according to a sending destination of said second signal (col.102, line 66 to col.103, line 25, col.103, lines 46-49); and

a wireless signal transmission part for sending said second signal from said first switching part to a base station or a control station in a receiving side via a wireless circuit (col.23, lines 46-59);

an signal transmission part for sending said second signal from said first switching part to a base station or a control station in a receiving side via an circuit (col.23, lines 46-59), said switching apparatus corresponding to a base station or a control station in a receiving side comprising:

a wireless signal receiving part for receiving a third signal via a wireless circuit (col.1, lines 39-62);

an signal receiving part for receiving a third signal via an circuit (col.23, lines 46-59); and

a demodulation part for demodulating said third signal (see abstract, col.7, lines 19-27, col.8, lines 34-67, col.68, lines 31-34).

Hoole fails to explicitly disclose an optical fiber circuit, and an optical signal. However, Farber teaches an optical fiber circuit, an optical signal (fig.1-2, col.3, line 52 to col.4, line 8). Therefore, it would have been obvious to one ordinary skill the art in the time the invention was made to use an optical circuit, an optical signal as taught by Hoole with Farber in order to improve coverage in a

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wireless communications system (optical fiber can be run inside building, train stations, malls, etc.).

Regarding claim 2, Hoole further teaches the mobile communication system as claimed in claim 1, said switching apparatus corresponding to a base station or a control station in a sending side further comprising (col.80, line 54 to col.81, line 26):

a frequency control part for controlling a frequency of said second signal output from said modulation part according to said sending destination (fig.9, see abstract, col.21, line 65 to col.22, line 12);

wherein said first switching part switches said output destination according to said frequency of said second signal (fig.9, fig.71-73, col.21, lines 22-36, col.53, lines 14-34).

Regarding claim 3, Hoole further teaches the mobile communication system as claimed in claim 1, said switching apparatus corresponding to a base station or a control station in a sending side further comprising:

a variable directional antenna for sending said second signal from said wireless signal transmission part to a destination via said wireless circuit (fig.11-12, col.26, line 65 to col.27, line 8, col.29, lines 8-24); and

a beam forming part for directing said variable directional antenna to an antenna of a base station or a control station in a receiving side according to said

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frequency of said second signal (col.24, line 64 to col.25, line15, col.25, lines 45-65).

Regarding claim 4, Hoole further teaches the mobile communication system as claimed in claim 2, said switching apparatus corresponding to a base station or a control station in a sending side further comprising:

a variable directional antenna for sending said second signal from said wireless signal transmission part to a destination via said wireless circuit (fig.11-12, col.26, line 65 to col.27, line 8, col.29, lines 8-24); and

a beam forming part for directing said variable directional antenna to an antenna of a base station or a control station in a receiving side according to said frequency of said second signal (col.24, line 64 to col.25, line15, col.25, lines 45-65).

Regarding claim 5, Hoole further teaches the mobile communication system as claimed in claim 1, said switching apparatus corresponding to a base station or a control station in a receiving side further comprising a second switching part for switching an output destination of said third signal to a demodulation part (col.102, line 66 to col.103, line 25, col.103, lines 46-49).

Regarding claim 6, Hoole further teaches the mobile communication system as claimed in claim 5, wherein said second switching part switches said output destination of said third signal according to a frequency of said third signal (fig.9, fig.71-73, col.21, lines 22-36, col.53, lines 14-34).

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Regarding claim 7, Hoole further teaches the mobile communication system as claimed in claim 1, said switching apparatus corresponding to a base station or a control station in a receiving side further comprising a selection part for selecting a fourth signal and outputting said fourth signal to said demodulation part when a plurality of signals are received (see abstract, col.7, lines 19-27, col.8, lines 34-67, col.68, lines 31-34).

Regarding claim 8, Hoole further teaches the mobile communication system as claimed in claim 1, said switching apparatus corresponding to a base station or a control station in a receiving side further comprising a frequency control part for controlling said demodulation part such that said demodulation part can demodulate said third signal according to a frequency of said third signal (see abstract, col.7, lines 19-27, col.8, lines 34-67, col.68, lines 31-34).

Regarding claim 9, Hoole further teaches the mobile communication system as claimed in claim 1, said switching apparatus corresponding to a base station or a control station in a receiving side further comprising:

a variable directional antenna for receiving said third signal from said wireless circuit (fig.11-12, col.26, line 65 to col.27, line 8, col.29, lines 8-24), and outputting said third signal to said wireless signal receiving part (col.102, line 66 to col.103, line 25, col.103, lines 46-49);

~~a beam forming part for directing said variable directional antenna to an~~
antenna of a base station or a control apparatus in a sending side (col.24, line 64 to col.25, line 15, col.25, lines 45-65).

Regarding claim 10, Hoole further teaches the mobile communication system as claimed in claim 9, wherein said beam forming part directs said variable directional antenna to an antenna according to a frequency of said third signal (col.24, line 64 to col.25, line15, col.25, lines 45-65)

Regarding claim 11, Hoole teaches a switching apparatus in a mobile communication system including a plurality of base stations and a control station which controls said base stations (fig.1D, col.7, line19-27, col.15, lines 16-35), each of said base stations and said control station having said switching apparatus (fig.71-73, col.53, lines 1-34), said switching apparatus being connected to another switching apparatus via a wireless circuit (fig.71-73, fig.101, col.53, lines 1-34, col.56, lines 38-46), said switching apparatus comprising:

a modulation part for modulating a first signal into a second signal of a unified transmission form (see abstract, col.7, lines 19-27, col.8, lines 34-67);

a first switching part for switching an output destination of said second signal from said modulation part according to a sending destination of said second signal (col.102, line 66 to col.103, line 25, col.103, lines 46-49); and

a wireless signal transmission part for sending said second signal from said first switching part to a base station or a control station in a receiving side via a wireless circuit (col.23, lines 46-59); and

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an signal transmission part for sending said second signal from said first switching part to a base station or a control station in a receiving side via an circuit (col.23, lines 46-59).

Hoole fails to explicitly disclose an optical fiber circuit, and an optical signal. However, Farber teaches an optical fiber circuit, an optical signal (fig.1-2, col.3, line 52 to col.4, line 8). Therefore, it would have been obvious to one ordinary skill the art in the time the invention was made to use an optical circuit, an optical signal as taught by Hoole with Farber in order to improve coverage in a wireless communications system (optical fiber can be run inside building, train stations, malls, etc.).

Regarding claim 12, Hoole further teach the switching apparatus as claimed in claim 11, further comprising:

a frequency control part for controlling a frequency of said second signal output from said modulation part according to said sending destination (fig.9, see abstract, col.21, line 65 to col.22, line 12);

wherein said first switching part switches said output destination according to said frequency of said second signal (fig.9, fig.71-73, col.21, lines 22-36, col.53, lines 14-34).

Regarding claim 13, Hoole further teaches the switching apparatus as claimed in claim 11, further comprising:

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a variable directional antenna for sending said second signal from said wireless signal transmission part to a destination via said wireless circuit (fig.11-12, col.26, line 65 to col.27, line 8, col.29, lines 8-24); and

a beam forming part for directing said variable directional antenna to an antenna of a base station or a control station in a receiving side (col.24, line 64 to col.25, line15, col.25, lines 45-65).

Regarding claim 14, Hoole further teaches the switching apparatus as claimed in claim 12, further comprising:

a variable directional antenna for sending said second signal from said wireless signal transmission part to a destination via said wireless circuit (fig.11-12, col.26, line 65 to col.27, line 8, col.29, lines 8-24) ; and

a beam forming part for directing said variable directional antenna to an antenna of a base station or a control station in a receiving side according to said frequency of said second signal (col.24, line 64 to col.25, line15, col.25, lines 45-65).

Regarding claim 15, Hoole teaches a switching apparatus in a mobile communication system including a plurality of base stations and a control station which controls said base stations (fig.1D, col.7, line 19-27, col.15, lines 16-35), each of said base stations and said control station having said switching apparatus (fig.71-73, col.53, lines 1-34), said switching apparatus being

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connected to another switching apparatus via a wireless circuit (fig.71-73, fig.101, col.53, lines 1-34, col.56, lines 38-46), said switching apparatus comprising:

a wireless signal receiving part for receiving a first signal via a wireless circuit (col.1, lines 39-62);

an signal receiving part for receiving a first signal via an circuit (col.23, lines 46-59); and a demodulation part for demodulating said first signal (see abstract. col.7, lines 19-27, col.8, lines 34-67, col.68, lines 31-34).

Hoole fails to explicitly disclose an optical fiber circuit, and an optical signal. However, Farber teaches an optical fiber circuit, an optical signal (fig.1-2, col.3, line 52 to col.4, line 8). Therefore, it would have been obvious to one ordinary skill the art in the time the invention was made to use an optical circuit, an optical signal as taught by Hoole with Farber in order to improve coverage in a wireless communications system (optical fiber can be run inside building, train stations, malls, etc.).

Regarding claim 16, Hoole further teaches the switching apparatus as claimed in claim 15, further comprising a switching part for switching an output destination of said first signal to a demodulation part (col.102, line 66 to col.103, line 25, col.103, lines 46-49).

Regarding claim 17, Hoole further teaches the switching apparatus as claimed in claim 16, wherein said switching part switches said output destination

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of said first signal according to a frequency of said first signal (fig.9, fig.71-73, col.21, lines 22-36, col.53, lines 14-34).

Regarding claim 18, Hoole further teaches the switching apparatus as claimed in claim 15, further comprising a selection part for selecting a second signal and outputting said second signal to said demodulation part when a plurality of signals are received (see abstract, col.7, lines 19-27, col.8, lines 34-67, col.68, lines 31-34).

Regarding claim 19, Hoole further teaches the switching apparatus as claimed in claim 15, further comprising a frequency control part for controlling said demodulation part such that said demodulation part can demodulate said first signal according to a frequency of said first signal (see abstract, col.7, lines 19-27, col.8, lines 34-67, col.68, lines 31-34).

Regarding claim 20, Hoole further teaches the switching apparatus as claimed in claim 15, further comprising:

a variable directional antenna for receiving said first signal from said wireless circuit (fig.11-12, col.26, line 65 to col.27, line 8, col.29, lines 8-24) and outputting said first signal to said wireless signal receiving part (col.102, line 66 to col.103, line 25, col.103, lines 46-49);

a beam forming part for directing said variable directional antenna to an antenna of a base station or a control apparatus in a sending side (col.24, line 64 to col.25, line 15, col.25, lines 45-65).

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Regarding claim 21, Hoole further teaches the switching apparatus as claimed in claim 20, wherein said beam forming part directs said variable directional antenna to an antenna according to a frequency of said first signal (col.24, line 64 to col.25, line 15, col.25, lines 45-65).

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khai M Nguyen whose telephone number is 703.305.3906. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 703.308.7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Khai Nguyen

7/15/2004


NAY MAUNG

SUPERVISORY PATENT EXAMINER